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ABSTRACT

This study compared the effectiveness of the traditional library lecture and computer-assisted instruction (CAI) in scheduled credit classes in library skills. Subjects were 18 college freshman attending branch campuses who were academically underprepared for college level study and who also lacked basic library skills. Eleven students were taught in the lecture group, and eight students in the CAI group. The CAI group used four floppy disks and an instruction manual which covered the card catalog, periodical indexes, newspaper indexes, and government publications indexes. In addition, the CAI group completed an attitude survey to measure the effectiveness of CAI as a teaching method. No significant differences were found between the previous library skills of the lecture group and the CAI group, but the CAI group had both a significantly higher level of performance on a mastery test given after the completion of the instruction, and highly positive attitudes toward CAI as an instructional method. It is suggested that CAI should be considered for implementation when developing and/or revising library instruction programs even though other methods may be preferable in certain situations. The text is supplemented by four tables and five bibliographic references/notes. A list of 13 references and a 13-item bibliography are also provided. (EW)

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Teaching Library Skills to Academically Underprepared College Freshmen

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Abstract

The differences in library skills learning among academically underprepared college freshman attending a branch campus were investigated. The traditional library lecture and computer assisted instruction methods were examined in a credit class setting. Test scores of the two groups were compared using a one-way analysis of variance. The findings indicated that computer assisted instruction was superior to the traditional library lecture method. Also, students' attitudes toward computer assisted library instruction were positive. This study demonstrated that computer assisted library instruction is important for a total library instructional program.

Teaching Library Skills to Academically Underprepared College Freshmen

INTRODUCTION

The purpose of this study was to determine whether learning might be enhanced by using computer assisted instruction for library skills. The study was targeted at college students attending branch campuses who tend to be academically underprepared for college level study and also lack basic library skills. These students are uncertain how to approach the library and how to use it resources for investigative research. Helping students master basic library research techniques would be beneficial in helping them complete other library related assignments.

The question of library instruction in higher education and methods of teaching it have been persistent concerns for academic librarians. The need for library instruction, especially for freshmen attending a branch campus, is noted in the literature produced. Also, bibliographic instruction librarians speak of the need. Additional support for it may be found in various research manuals--Bailey, Lester, MLA, and Turabian. Both the Council on Library Resources and the National Endowment for the Humanities have been supporting projects designed to strengthen the library's role in the teaching/learning process.(1) The purpose of teaching library skills is to help students learn how to use the college library effectively and efficiently. Since the college library is usually more complex than a high school or public library, students may become confused, frustrated, and irritated when using it. With proper instruction in the use of library resources, students can avoid much of the aggravation caused by their lack of adequate

library skills and also achieve more success in performance requiring library-based assignments.

Over the years, there have been various types of library instruction techniques utilized to teach basic library skills to students.

> There are a variety of approaches to teaching library skills. As a growing body of literature shows, library usage has been taught in the format of one or two sessions of a regular course (course-related sessions, tours, term paper clinics, and other orientations. An approach that appears frequently in the literature is the library credit course--teaching of library skills within the framework of a course when all or a significant portion of the course is under the direction and control of a librarian.(2)

One of the most common methods is the library orientation tour. This approach merely familiarizes students with the library, its resources, and services. Somewhat similar is a self-guided library tour which utilizes a prerecorded explanation of the library. Library class units related to a specific courses are also popular. These instructional units are usually taught by a librarian and are one class period in length. Programmed instruction classes are occasionally used, and they provide a more broad-based approach to library instruction that the previously mentioned types. However, credit class library instruction is generally considered to be the most comprehensive approach to library instruction. The opportunity to earn academic credit appears to motivate students more than non-credit types of library instruction. Within this context, Beaubien, Hogan, and George (1982) in an overview of pros

and cons of library courses advocates the supremacy of bibliographic instruction courses over other methods of instruction.

In recent years, the philosophy of and rationale for credit library instruction courses for college students have increased. Dudley (1972) also advocates the credit course in library instruction as the best solution for undergraduate library instruction, and Eisenbach (1978) affirms the value for both students and librarians for bibliographic instruction courses. While positive benefits have been noted with credit classes, there are some drawbacks. First of all, only a few students may have an opportunity to take such a course. Also, Eyman and Nunley (1978) and Reeves (1979) both have observed that no significant advantage was observed between students enrolled in credit courses versus those not taking credit courses. Other studies such as Breivik (1982) and Wood (1984) have suggested a significant gain in both knowledge and attitude in addition to offering at least one substantial solution to the problem of library instruction. Reeves' (1979) test results revealed an improvement in library skills among those taking a credit class.

Computer assisted library instruction is becoming an increasingly popular method for bibliographic instruction programs. Librarians, especially in large academic libraries, are gradually becoming aware of its potential. Axeen (1967) found that, while there was no overall significant difference between the traditional lecture method and the computer based instruction groups, it was possible to teach an introductory library skills course using the CAI method. Clark (1973) advocated that different teaching methods

should be used in bibliographic instruction, and that CAI can be regarded as an additional method in total library instruction. Clark (1974) also noted that, while CAI is not a substitute for person-to-person contact, it was a good motivator for library instruction. Eastmond (1975) demonstrated that attitude about CAI at Utah State University was generally positive and that student response to it was overwhelmingly positive. Williams and Davis (1979) found that PLATO based CAI ssons in a biology library were highly effective. Also students preferred one-on-one instruction regardless of the method and had no interest in traditional library instruction. The results of their study support the expansion of computer assisted library instruction. On the other hand, Johnson and Plake (1980) did not achieve impressive results when comparing CAI to tutorial instruction although both methods were significantly better than library tours or no instruction. They noted that further investigation would be needed to determine the cause of the low scores. While every attempt to teach library skills will not achieve a high degree of success, librarians continue their commitment for library instruction.

A related issue is how those credit courses should be taught. One method is the traditional library lecture. The typical library skills lecture consists of an introduction to various reference or finding tools with an explanation of their scope and usage. Quizes and class assignments are often used to determine how well students have understood each resource. A second approach is computer assisted instruction which provides a self-paced approach to library skills instruction which enables students to interact with the CRT and respond to a preprogrammed course of study.(3)

> Computers can, of course, be highly interactive. With a computer program, the computer can ask the question, and students can type in the answer and receive immediate feedback as to whether the answers are right or wrong. Computer assisted instruction is beginning to be used extensively in library instruction at the postsecondary level.(4)

There are direct benefits of CAI to students. Students will be better prepared to use the college library and its resources; may demonstrate positive attitudes toward independent study and investigative research. Students introduced to the use of computers in the library will be familiar with this medium as the probable choice for independent study and may draw upon their CAI experiences as college libraries move toward computerized online catalogs. In addition, library staff will be able to use CAI as a first response in dealing with large numbers of students and will also be able to instruct more students with CAI than previously possible with other types of library instruction.

A final area of concern is the relevance of CAI to special populations of students, e.g., branch campus students. At a branch campus there is a unique situation because students, with some exceptions, tend to be academically underprepared. Computer assisted library instruction for branch campus students will provide them with an opportunity to learn basic library skills through credit class and independent study. Computer assisted library instruction meets the needs of those students who have difficulty with college level study and also those who are more advanced. Since CAI is self-paced and provides immediate feedback,

it will prove to be more effective than traditional library instruction. Students will be able to progress and assimilate materials at a rate and in a manner that enhances their understanding of library skills.

The purpose of this research project was to compare two commonly used methods of teaching library skills: the traditional lecture and computer assisted instruction. The traditional lecture group was responsible for reading and writing assignments as well as attending class lectures about various finding tools. The computer assisted instruction group was responsible for learning about the same finding tools through a CAI software program. They did not receive any additional outside course-work or assignments. CAI for academically underprepared branch campus students was expected to be superior to the traditional lecture.

METHOD

SUBJECTS

The subjects participating in this experiment were male and female college freshmen attending a branch campus. A total of nineteen students were involved in library instruction for credit. There were 11 students in the traditional lecture group and 8 in the computer assisted instruction group. All were enrolled in LB-151 Introduction to Library Resources which is a one-credit general education course. Random assignment to groups may be assumed because it was not known in advance which section was traditional or CAI and there was no reason to suspect that students differentially chose one section over the other.

MATERIALS AND PROCEDURE

Following each lesson, students were tested on the material

covered. Test questions were selected from standardized library manuals. The tests were mastery in nature and measured performance on specific library skills presented in the class materials. Also, an attitude survey was taken to determine the degree of effectiveness of CAI as an instructional method.

The project was implemented as part of scheduled credit classes in library instruction. One librarian taught both classes which met for one hour each week during the semester. All students were given a course description and syllabus. Section 201 served as the control group and followed the course syllabus in the traditional library lecture method. Section 202 served as the experimental group and followed the course syllabus according to the computer assisted instruction method. The CAI software used in this experiment was developed by the University of Delaware Library and the Office of Computer-Based Instruction. The package includes four floppy discs and an instructional manual. Each disc is a separate library skills program: The Card Catalog, Periodical Indexes, Newspapers Indexes, and Government Documents Indexes.

> Library Research Skills is a series of four programs for the IBM PC. It is designed to help users develop research strategies based on their own information needs. The programs are targeted for college freshmen, but college bound high school students and others wishing to develop information gathering skills may also benefit from them. Little or no prior knowledge of libraries is assumed. Since the programs are self-explanatory, users may work independently, without the presence of a teacher or librarian. Each program is effective

whether used alone or as part of the series.(5)

A survey of previous library skills served as pretest to show that both groups were equivalent in previous library instruction and computer assisted instruction. The survey contained five questions with yes or no responses. The questions focused on key areas of possible library experience like previous courses or work as a library assistant. Both groups received initial lectures on the introduction and organization of library resources, the nature and scope of investigative research, and library services. The traditional group received lectures about the card catalog, periodical indexes, newspaper indexes, and government document indexes. The experimental group received computer assisted instruction about the same topics. Test performance of these groups was used in evaluating the success of the CAI treatment. After both groups had completed each library skills lesson, they were tested to determine to what degree they had mastered basic library skills. Test questions were selected from A LIBRARY ORIENTATION TEST FOR COLLEGE FRESHMEN and LIBRARY SKILLS: A PROGRAM FOR SELF-INSTRUCTION.

Additionally, after all four lessons were completed, the CAI group completed an attitude survey to measure the effectiveness of CAI as a teaching method. Questions were answered using a five point scale ranging from strongly disagree to strongly agree. Questions included, for example, evaluation of CAI as a learning experience or if CAI was helpful or valuable.

RESULTS

SURVEY OF PREVIOUS LIBRARY SKILLS

An examination of the survey of previous library skills showed

that both the traditional lecture and the CAI groups were reasonably equal in exposure to previous library instruction and computer assisted instruction. The yes/no responses for each question were totaled and converted into percentages. (See Table 1) There were no significant differences between the overall exposure of the two groups to previous skills; the overall percentage of yes responses in the lecture group was 43.6 and in CAI was 42.6. There were no differences on any individual question.

TABLE 1

SURVEY OF PREVIOUS LIBRARY SKILLS

	LECTURE	CAI
QUESTIONS	YES	YES
1. Taken a library skills course?	27%	25%
2. Worked as a library assistant?	36%	38%
3. Previous library research?	73%	87%
4. Had CAI library instruction?	9%	0%
5. Any type of CAI before?	73%	63%
Average percentages	43.6%	42.6%

MASTERY SCORES

The test scores were evaluated using a one-way analysis of variance (ANOVA). Data for the ANOVA consisted of combined quiz scores with a maximum of 45 points. The CAI group showed a better level of performance than the traditional lecture group. The mean score for the CAI group [X=41.1250] was higher than the mean score for the traditional lecture group [X=34.1818]. The standard deviation for the CAI group [s.d.=2.59] showed less variability than the standard deviation for the traditional lecture group [s.d.=5.11]. The difference in performance level was highly

significant, $F(1,17)=12.30, p<.01$.

SURVEY OF CAI ATTITUDES

Results of the attitude survey were positive about CAI library instruction. The average score for each question ranged from a low of 3.875 to a high of 4.875 (where 5 is strongly agree and 1 is strongly disagree). Students strongly indicated that CAI was easily understood, was helpful, and improved their attitude about the library.

TABLE 2

EVALUATION OF CAI

QUESTIONS	FREQUENCY					MEAN
	SA	A	N	D	SD	SCORE
1. CAI as a learning experience?	5	3	0	0	0	4.625
2. CAI is easy to understand?	7	1	0	0	0	4.875
3. CAI as first choice?	3	2	3	0	0	4.375
4. Required to take CAI?	2	3	3	0	0	3.875
5. CAI is valuable?	5	3	0	0	0	4.625
6. CAI is helpful?	3	2	2	0	0	4.125
7. CAI has improved attitude?	5	2	1	0	0	4.500

DISCUSSION

The need for library instruction at the college level was noted at the onset of this project. The findings support the hypothesis that computer assisted library instruction for branch campus students is superior to the traditional library lecture method. Not only were test mastery scores higher, but also students' attitudes about CAI were positive.

Since branch campus students generally are not as well prepared to do college level work as main campus students, they

have a tendency to develop poor attitudes. When this occurs, poor class performance is almost certain to follow. Therefore, learning activities and teaching methods which are likely to support positive attitudes for branch campus students are important for both present and future academic performance.

In addition, computer assisted library instruction has other implications. CAI may be integrated as a regular part of credit class library instruction and used by students pursuing investigative research and independent study. CAI will contribute significantly to the development of an online public library catalog. Also, it may be utilized in a university-wide library skills program.

Although the data supports CAI as the better method, other methods may be preferable in different situations. Computer assisted library instruction, however, should at least be considered for implementation when both developing and revising library instruction programs. Also, learning objectives should be formulated to address the needs and goals of students. Focusing on important concepts, analyzing questions, and developing search strategies need to be integrated into library skills instruction as well.

This study confirms the potential of computer assisted library instruction for a branch campus setting and suggests potential uses for a university-wide program of library instruction.

TABLE 1

SURVEY OF PREVIOUS LIBRARY SKILLS

LB-151 SECTION _____

Please circle either YES or NO in response to the following questions.

1. Have you ever taken a library skills course? YES NO
2. Have you ever worked as a student library assistant in either your high school library or public library? YES NO
3. Have you had any class assignments in high school which required library research or a research paper? YES NO
4. Have you ever had any computer assisted library skills instruction? YES NO
5. Have you ever had any other type of computer assisted instruction? YES NO

TABLE 2

EVALUATION OF COMPUTER ASSISTED LIBRARY INSTRUCTION

The purpose of this questionnaire is to describe how effective computer assisted instruction has been for teaching library skills. Read each statement carefully and circle your response. To maintain confidentiality, do not write your name anywhere on the questionnaire.

SA - Strongly agree
A - Agree
N - Neutral
D - Disagree
SD - Strongly disagree

1. Overall, computer assisted library instruction is a very satisfactory learning experience. SA A N D SD
2. Computer assisted library instruction is easy to understand. SA A N D SD
3. Computer assisted library instruction would be your first choice if you decided to take a credit course in library skills. SA A N D SD
4. All students should be required to take computer assisted library instruction. SA A N D SD
5. Computer assisted instruction for library skills has been valuable in learning about the library. SA A N D SD
6. Computer assisted library instruction will help you to identify and locate books, magazine articles, government documents and newspaper articles without help from the library staff. SA A N D SD
7. Computer assisted instruction has improved your attitude about the library. SA A N D SD

FOOTNOTES

1"Educating the User: New Approaches Tried." LIBRARY JOURNAL, 103 (1978) 424.

2 Mignon S. Adams. TEACHING LIBRARY SKILLS FOR CREDIT (Phoenix: Oryx Press, 1985) 3.

3 Philip E. Burton. A DICTIONARY OF MINICOMPUTING AND MICROCOMPUTING (New York: Garland Press, 1982) 41.

4 Mignon S. Adams. TEACHING LIBRARY SKILLS FOR CREDIT (Phoenix: Oryx Press, 1985) 56.

5 University of Delaware and the Office of Computer-Based Instruction. LIBRARY RESEARCH SKILLS; FOUR PROGRAMS FOR THE IBM PC (Newark: University of Delaware, 1985) 7.

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